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EXAMINER

PARTON, KEVIN S

ART UNIT	PAPER NUMBER
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2153

DATE MAILED: 07/02/2003

4

Please find below and/or attached an Office communication concerning this application or proceeding.

Signature

Office Action Summary

Application No.

09/557,451

Applicant(s)

ABAYE ET AL.

Examiner

Kevin Parton

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-27 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 April 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-3, 5-7, 9-16, 18, 20, and 22-27 are rejected under 35 U.S.C. 102(b) as being anticipated by Berman (USPN 5,754,831).

3. Regarding claim 1, Berman (USPN 5,754,831) teaches a system for determining performance of a communications system with means for:

- a. Storing representations of plural components of the communications system, the components including a first packet-based network and at least one network device (column 6, lines 35-45, 51-60; column 2, lines 52-56; figure 3; column 6, line 42).
- b. Assigning one or more performance parameters for each of the components (column 6, lines 57-60).
- c. Deriving a quality indication of the communications system based on the performance parameters of the components (column 7, lines 36-57; column 2, lines 46-48).

4. Regarding claim 2, Berman (USPN 5,754,831) teaches all the limitations as applied to claim 1. He further teaches means wherein the components include a second packet-based

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network, the method further comprising assigning one or more performance parameters for the second packet-based network (column 6, lines 39-43).

5. Regarding claim 3, Berman (USPN 5,754,831) teaches all the limitations as applied to claim 1. He further teaches means wherein assigning the one or more performance parameters includes assigning a packet delay parameter (column 7, lines 35-57; column 8, line 66 – column 9, line 1).

6. Regarding claim 5, Berman (USPN 5,754,831) teaches all the limitations as applied to claim 1. He further teaches means wherein assigning the one or more performance parameters includes assigning a packet jitter parameter (column 7, lines 64-65). Note that it is known whether or not packets arrive in order.

7. Regarding claim 6, Berman (USPN 5,754,831) teaches all the limitations as applied to claim 1. He further teaches means wherein storing the representations includes storing models of the plural components, the models capable of being linked to create a representation of the communications system (column 6, lines 35-45, 51-61; column 7, lines 2-5).

8. Regarding claim 7, Berman (USPN 5,754,831) teaches all the limitations as applied to claim 6. He further teaches means for providing a graphical user interface in which the models may be manipulated to create the representation of the communications system (column 7, lines 2-5; column 5, lines 57-64).

9. Regarding claim 9, Berman (USPN 5,754,831) teaches all the limitations as applied to claim 1. He further teaches means for combining the representations of the plural components to create the communications system (column 6, lines 35-45; 51-61).

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10. Regarding claim 10, Berman (USPN 5,754,831) teaches a system for determining performance of a communications system comprising:

- a. A storage device containing representations of plural components of the communications system, the plural components including a packet-based network and at least one network device, each of the components being assigned one or more performance parameters (column 6, lines 35-45, 51-60; column 2, lines 52-56; figure 3; column 6, line 42; column 6, lines 57-60).
- b. A controller to calculate a predicted quality of the communications system based on the one or more performance parameters (column 7, lines 36-57; column 2, lines 46-48).

11. Regarding claim 11, Berman (USPN 5,754,831) teaches all the limitations as applied to claim 10. He further teaches means wherein the one or more performance parameters include a packet delay (column 7, lines 35-57; column 8, line 66 – column 9, line 1).

12. Regarding claim 12, Berman (USPN 5,754,831) teaches all the limitations as applied to claim 11. He further teaches means wherein the packet delay of each network element is treated as an independent variable (column 7, lines 35-57; column 8, line 66 – column 9, line 1; column 6, lines 51-60). Note that packet delay can be set by the user for each element.

13. Regarding claim 13, Berman (USPN 5,754,831) teaches all the limitations as applied to claim 12. He further teaches means wherein the controller calculates an overall packet delay of the communications system by summing the packet delays of the plural components (column 7, lines 36-57; column 8, lines 3-5).

14. Regarding claim 14, Berman (USPN 5,754,831) teaches all the limitations as applied to claim 10. He further teaches means wherein a first performance parameter associated with each network component is treated as an independent variable (column 6, lines 51-61).

15. Regarding claim 15, Berman (USPN 5,754,831) teaches all the limitations as applied to claim 14. He further teaches means wherein a value of the overall first performance parameter is derived by combining the first performance parameters of the plural components (column 7, lines 36-57; column 8, lines 3-5). This would be true for any additive parameter.

16. Regarding claim 16, Berman (USPN 5,754,831) teaches all the limitations as applied to claim 10. He further teaches means wherein the representation of the packet based network includes a representation of a collection of links and routers (column 6, lines 35-45).

17. Regarding claim 18, Berman (USPN 5,754,831) teaches all the limitations as applied to claim 10. He further teaches means wherein the packet-based network includes a public network, and wherein the storage device further contains a representation of a local network (column 6, lines 35-45).

18. Regarding claim 20, Berman (USPN 5,754,831) teaches a system for modeling performance of a communications system with means to:

- a. Store models of plural components of the communications system, the plural components including a packet-based network and at least one network device (column 6, lines 35-45, 51-60; column 2, lines 52-56; figure 3; column 6, line 42).
- b. Combine the models to represent the communications system (column 6, lines 35-45, 51-60; column 2, lines 52-56; figure 3; column 6, line 42)

- c. Determine a quality level of the communications system using the stored models (column 7, lines 36-57; column 2, lines 46-48).

19. Regarding claim 22, Berman (USPN 5,754,831) teaches all the limitations as applied to claim 20. He further teaches means wherein the instructions when executed cause the controller to store one or more performance parameters to each model (column 6, lines 57-60).

20. Regarding claim 23, Berman (USPN 5,754,831) teaches all the limitations as applied to claim 20. He further teaches means wherein the performance parameters are associated with communications of packets through the communications system (column 6, lines 57-60; column 7, lines 36-57).

21. Regarding claim 24, Berman (USPN 5,754,831) teaches all the limitations as applied to claim 23. He further teaches means wherein the performance parameters include at least one of a packet delay, packet loss, and packet jitter (column 7, lines 35-57; column 8, line 66 – column 9, line 1).

22. Regarding claim 25, Berman (USPN 5,754,831) teaches all the limitations as applied to claim 20. He further teaches means wherein the instructions when executed causes the controller to associate a performance parameter with each of the plural components and to combine the performance parameters of each of the plural components to derive an overall performance parameter value (column 7, lines 36-57; column 8, lines 3-5). This would be true for any additive parameter.

23. Regarding claim 26, Berman (USPN 5,754,831) teaches all the limitations as applied to claim 25. He further teaches means wherein the performance parameter includes one of a packet delay, packet jitter, and packet loss (column 7, lines 35-57; column 8, line 66 – column 9, line 1).

24. Regarding claim 27, Berman (USPN 5,754,831) teaches a system for predicting performance of a communications system with means to:

- a. Assign a performance parameter to each of plural components in the communications system, the plural components including a packet-based network (column 6, lines 35-45, 51-60; column 2, lines 52-56; figure 3; column 6, line 42).
- b. Derive a quality indication based on the performance parameters of the plural components (column 7, lines 36-57; column 2, lines 46-48).

Claim Rejections - 35 USC § 103

25. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

26. Claims 8, 17, 19, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berman (USPN 5,754,831).

27. Regarding claims 8 and 21, although the system disclosed by Berman (USPN 5,754,831) (as applied to claims 1 and 20, respectively) shows substantial features of the claimed invention, it fails to disclose means wherein deriving the quality indication includes calculating an E-model quality rating value.

Nonetheless, these features are well known in the art and would have been an obvious modification of the system disclosed by Berman (USPN 5,754,831). The E-model is a standard generated and maintained by the International Telecommunications Union.

A person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Berman (USPN 5,754,831) by employing the E-model quality rating value to signify the quality of network performance. Any rating scale could be used that takes into account the performance parameters chosen. This benefits the system by giving a normalized³ value that can be compared among vastly different networks.

28. Regarding claim 17, although the system disclosed by Berman (USPN 5,754,831) (as applied to claim 10) shows substantial features of the claimed invention, it fails to disclose means wherein the representation of the packet based network includes a representation of an Internet Protocol network.

Nonetheless, these features are well known in the art and would have been an obvious modification of the system disclosed by Berman (USPN 5,754,831).

A person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Berman (USPN 5,754,831) by employing the representation of an IP based network. IP networks are very common in current usage and information will be flowing from LANs to the Internet. This benefits that system by giving a more flexible model and a more realistic representation.

29. Regarding claim 19, although the system disclosed by Berman (USPN 5,754,831) (as applied to claim 10) shows substantial features of the claimed invention, it fails to disclose means wherein the representation of the packet based network includes a representation of circuit switched device.

Nonetheless, these features are well known in the art and would have been an obvious modification of the system disclosed by Berman (USPN 5,754,831).

A person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Berman (USPN 5,754,831) by employing the representation of a circuit switched device. Hybrid networks are very common in current usage and information will be flowing from LANs to circuit switched networks. This benefits that system by giving a more flexible model and a more realistic representation.

30. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Berman (USPN 5,754,831) in view of Cain et al. (USPN 6,028,846).

31. Regarding claim 4, although the system disclosed by Berman (USPN 5,754,831) (as applied to claim 1) shows substantial features of the claimed invention, it fails to disclose means wherein assigning one or more performance parameters includes assigning a packet loss parameter.

Nonetheless, these features are well known in the art and would have been an obvious modification of the system disclosed by Berman (USPN 5,754,831), as evidenced by Cain et al. (USPN 6,028,846).

In an analogous art, Cain et al. (USPN 6,028,846) discloses a system for the simulation of network performance wherein assigning one or more performance parameters includes assigning a packet loss parameter (column 4, lines 1-5, 46-57).

Given the teaching of Cain et al. (USPN 6,028,846), a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Berman (USPN 5,754,831) by employing the use of a packet loss parameter. This benefits the system because packet loss is a common problem and knowing the likelihood of loss, appropriate recovery means can be implemented.

Conclusion

32. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Please see the following:

- a. Bhat et al. (USPN 6,279,039) – Network simulation for maximizing performance of streaming data.
- b. Hellerstein et al. (USPN 6,430,615) – Network performance modeling and prediction.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Parton whose telephone number is (703)306-0543. The examiner can normally be reached on M-F 8:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenton Burgess can be reached on (703)305-4792. The fax phone numbers for the organization where this application or proceeding is assigned are (703)746-9242 for regular communications and (703)746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-3900.

Kevin Parton
Examiner
Art Unit 2153

ksp
June 27, 2003


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SUPERVISORY PATENT EXAMINER
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